

4. AIR AND SPACE ISSUES AND PLANNING

[Related topics: 1.9, 1.10, 1.15, 1.30, 1.31, 5.13, 5.31]

4.1 Streamlining the Acquisition Process

- Suggest ideas and alternatives that the USAF and DOD can do to acquire capabilities in strategically relevant periods of time.
- What steps can the Air Force take to help streamline the DOD's acquisition process?
- What are the tradeoffs involved in speeding up the acquisition process?
- What degree of freedom does the Air Force have due to congressional oversight?
- Discuss case studies of system acquisitions providing lessons learned.
- What are the affects of the joint requirements process on acquisitions, particularly the joint capabilities integration development system (JCIDS)?
- Compare and contrast merits and demerits of long-term acquisition programs versus shorter-term incremental/spiral programs?
- What are the relative advantages and disadvantages between incremental and spiral technology development?
- Discuss the advantages and disadvantages of concurrent versus serial development efforts, for example conducting integrated F-35 Task Force Operational Testing & Developmental testing together.
- How can Air Force identify the scale of technological advance?
- Today, everything is built to satisfy requirements. Discuss how one acquires advanced technological capabilities when one may not even know one has a need or requirement.
- The Air Force CRRA process is one mechanism to define capabilities shortfalls, are there others?

POC: Maj Peter A. Garretson, AF/A8XC, 703-692-4795

Priority: 1

Key Terms: acquisitions, space systems, congressional oversight, JCIDS, spiral development, current development, serial development

4.2 What Is The Role of Air Force Doctrine Today?

- Do we need Air Force doctrine in lieu of Joint doctrine?
- If Air Force doctrine is to be subsumed by Joint doctrine, how should the Air Force approach the development of Joint doctrine?
- What does the recent Doctrine Center reorganization mean to the importance the Air Force places on the role of doctrine?
- Discuss the Air Force view of doctrine in comparison to the views of the Army and Navy.
- If doctrine is used to validate budget priorities, what is the effect on funding if Air Force doctrine is retired in favor of Joint doctrine?

POC: Mr Woody Parramore, AFDC/DD, 334-953-7560/DSN 493-7560

Priority: 1

Key Terms: doctrine, Air Force Doctrine, Joint Doctrine, funding

4.3 Directed Energy (DE)

- What are directed energy's policy implications (offensive and defensive) on the Air Force's capabilities?
- How do we protect U.S. and allied forces from directed energy attacks?
- Are there directed energy technologies emerging that could impact stealth technology?
- Can the integration of nuclear capabilities into international law serve as a case study for the integration of directed energy?
- Discuss/explore the moral implications of the use of DE in lethal and/or less than lethal force applications.
- How does the Air Force conduct BDA/Combat Assessment of DE attack?
- What is the concept of operations against a country with an integrated DE air defense system?

POC: Maj Dave Kirkendall, AF/A5XC, 703-696-6131; Suhaib Abdali, AF/A8XC, 703-692-6640

Priority: 1

Key Terms: directed energy, force protection, nuclear capabilities, international law

4.4 Future of Airlift

- What is the appropriate mix of transport aircraft to allow the Air Force to meet its mission requirements?
 - What is the effect of joint cargo aircraft?
- How will changes in the airline industry (e.g., bankruptcies, shift to regional jets, foreign ownership) affect the CRAF?
- Are there other means to achieve airlift capabilities, for example dirigibles?

POC: Maj Chris Byrom, U.S. Department of State, ISN/SPO, 202-647-7907

Priority: 1

Key Terms: transportation aircraft, airlift, joint cargo aircraft, domestic airline industry

4.5 Nuclear Weapons

- What is the role of US nuclear weapons?
- What is the affect of personnel retirement on the US nuclear arsenal?
- Can US meet NATO nuclear mission needs from CONUS?
- What is the nexus between missile defense and the nuclear posture?
- Does limited missile defense affect the ability of the US and Russia to meet their NPT Article 6 obligations?
- Explore the appropriate division of labor between the agencies responsible for maintaining US nuclear forces.
- Has the nuclear infrastructure been properly maintained?
- Complete a cost-benefit analysis of nuclear decommissioning.

POC: Tim Miller, SAIC, 703-415-3338; Dr. Jeff Larsen, SAIC, 719-637-8740, ext. 293
Priority: 1
Key Terms: nuclear weapons, NATO, nuclear arsenal, missile defense, nuclear decommissioning

4.6 Emerging Space Operations

- Given the rate of and potential for technological advancement in the commercial space sector, discuss the potential for adversaries to be able to develop affordable global strike capabilities.
- Persistent surveillance:
 - Discuss the potential for technological breakthroughs that might be useful in enabling longer staring space surveillance systems.
 - What other new technologies might improve this capability?
- Explore and discuss “flagging rights” for spacecraft and ship:
 - Case study between ships and spacecraft.

POC: POC: Maj Chris Byrom, U.S. Department of State, ISN/SPO, 202-647-7907
Priority: 1
Key Terms: global strike, space, persistence surveillance, flagging rights, ships

4.7 Myths versus Realities of Responsive Space Lift

- What are the myths and realities of responsiveness in space lift?
- Suggest ways to overcome obstacles.
- Discuss roles of the various military, non-military, and commercial entities in a responsive space lift architecture.
 - Who sets standards, suppliers, or customers?
 - Who establishes requirements for responsiveness in space lift?
- What are the expectations of the user/consumer?
 - What does AFSPC expect to get out of it?
 - What does the Combatant Command expect to get out of it?

POC: Maj Dan McCutcheon, AF/A3SSO, 703-695-6900
Priority: 1
Key Terms: space lift, standards, expectations, AFSPC, Combatant Command

4.8 Irregular Warfare

- What is the Air Force’s role in irregular warfare?
- What capabilities does the Air Force need to win an irregular war?
- Do current systems meet the Air Force needs?
- What would an Air Force CONOPS for irregular warfare look like?
- Discuss the pros and cons of the Air Force getting more involved in HUMINT to fight an irregular war.
 - Should AF HUMINT activities be confined to the strategic level or should/could they be expanded to the tactical level?
 - Conduct a case study of past Air Force HUMINT activities such as Civic Action Squadrons during the Vietnam War.

POC: Mr. George Monroe, SAIC, AF/A8XZ, 703-692-6615

Priority: 1

Key Terms: Irregular Warfare, air base security, foreign internal defense, COIN

4.9 Training for Irregular Warfare

- How can the Air Force help further US objectives without an irregular war fighting capability?
- What type of training is needed to effectively conduct irregular warfare?
 - From the individual Airman to the Base Commander.
- Recently the Army asked the Air Force to take over air base security “outside the fence.”
 - What new war skills might the Air Force expect to take on, for example.
 - What changes in security forces composition and activities would the Air Force need to achieve this goal?

POC: Mr. George Monroe, SAIC, AF/A8XZ, 703-692-6615

Priority: 1

Key Terms: Irregular Warfare, air base security, foreign internal defense, COIN

4.10 Foreign Internal Defense (FID)

- In light of recent events in post-war Afghanistan and Iraq, how should the Air Force best conduct Aviation FID activities?
 - What lessons can be learned from past operations in Southeast Asia concerning FID and COIN?
 - What is the role for AFSOC and the rest of the Air Force in FID?

POC: Mr. George Monroe, SAIC, AF/A8XZ, 703-692-6615

Priority: 1

Key Terms: irregular warfare, air base security, foreign internal defense, COIN

4.11 Counter-CBRNE

- Are there ways to improve the ability to F2T2 Weapons of Mass Destruction?
- How do we address the issue of contaminated aircraft, and how will this affect basing agreements with other countries?

POC: Maj Peter A. Garretson, AF/A8XC, 703-692-4795

Priority: 1

Key Terms: F2T2, WMD, contaminated aircraft

4.12 Air Force Smart Ops 21

- What processes does the Air Force need to develop or improve to meet the objectives in AFSO-21?
- Do Air Force Smart Ops 21 and Future Force Development need to be augmented to get people to think in different terms?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key Terms: Air Force Smart Ops 21, Future Force Development

4.13 How can the Air Force best organize, train, and equip for UAVs, as well as control and operate them?

- Review and critique the UAV Strategic Vision to determine if it meets the Air Force's strategic needs and develop ways to implement suggestions.
- Define what a UAV is. Should they be defined by range (strategic v. tactical), by payload, or some other way?
- What would a UAV look like that was built for long-range strike or persistent strike?
- How does the military control and deconflict this ever-growing number of aircraft?
- How does the military handle the bandwidth needed for aircraft control and sensor exploitation?
- What are the optimal capabilities that can be put into a UAV?
- What can a UAV do that a piloted aircraft cannot?

POC: Maj Peter A. Garretson, AF/A8XC, 703-692-4795

Priority: 1

Key Terms: UAV Strategic Vision, UAV

4.14 Escalation management with non-state actors

- Identify ways to deter and dissuade non-state actors.

POC: Maj Peter A. Garretson, AF/A8XC, 703-692-7495

Priority: 1

Key Terms: escalation management, non-state actors, terrorists

4.15 What are the factors to consider when setting up an organization to handle post-conflict stability operations and reconstruction?

- What is the best way to make this flexible and adaptable to the situation on the ground?
- What is the Air Force role in this?
- What is DOD's role?
- What is the relationship between the State Department and DOD? Which has the lead?
- Review the latest directives and guidance on such operations and identify the requirements from them that DOD and the Air Force are expected to meet.
- What should be the role of AF reserve component forces in stability operations?
- Should there be a standing Joint Task Force with the State Department in Washington, DC for these operations?
- What is the US and DOD policy for dealing with "ungoverned spaces" around the world?

POC: Lt Col DeMaso, AF/A35Z, 703-614-8395, DSN 224-8395

Priority: 1

Key Terms: OIF, OEF, MOOTW, SASO

4.16 Examine the stresses of high OPSTEMPO on the Air Force Reserve and Air National Guard.

- What roles are these forces playing and what roles should they be playing?
- How does this vary by career field?
- What factors impact reserve component forces?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key Terms: tempo, retention, recruiting, Guard, Reserve

4.17 Can integrating active and reserve component units improve operational efficiency?

- What are optimal active component/reserve component ratios for integrated units (including fighter, bomber, strategic airlift, space operations)?
- What tasks are best suited for Guard and Reserve forces?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key Terms: tempo, organization, Guard, Reserve

4.18 How can the Air Force logistically support the Army and Marine Corps distributed and re-supply operations?

- What are the relative costs of the current hub-and-spoke logistics system vice a precision airdrop capability?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key Terms: logistics, joint operations, OIF, OEF, mobility, airlift

4.19 What doctrine, equipment, organizational structures, and tactics, techniques, and procedures are needed to effectively support ground-based special operations forces across the wide range of contingency operations?

- How might establishing a UAV squadron meet this need?
- What modifications are needed to AFDD 2-7 to reflect USSOCOM's role as a supported combatant command?
- What capabilities are needed to provide cover/protection to ground-based special operations forces inserted well behind "enemy lines"?
- What organizational changes are needed for the air operations center to act in support of SOF?
- Write unclassified case studies of recent campaigns.

POC: Mr Woody Parramore, AFDC/DD, 334-953-7560/DSN 493-7560

Priority: 1

Key Terms: special operations forces, doctrine, contingency operations, joint operations, special ops, case studies, lessons learned, USSOCOM, AFSOC, SOF, CCT, PJ, AOC

4.20 Examine the domestic use of military assets.

- How will various military assets (ISR, C2, mobility) be used domestically in homeland defense and crisis management and what is NORTHCOM's role? How will these assets be tasked?
- What is the role of the Air National Guard in NORTHCOM homeland defense missions and how does it compare with their Title 32 responsibilities to their states?
- What role does NORTHCOM have in continuity of government and continuity of operations? What might the Air Force be asked to do?
- Are there service responsibilities that might fall under NORTHCOM's mission? (ex. UAVs, high-altitude airships, ISR)
- How can space assets be used to support NORTHCOM's domestic mission?
- How does the Coast Guard contribute to NORTHCOM's mission?
- How can DOD assist the Department of Homeland Security with border and transportation security, through the Border Patrol and Customs?

POC: Mr. Bill Powell, USNC J33O, 719-554-7211/DSN 692-7211

Priority: 1

Key Terms: NORTHCOM, homeland defense, homeland security, Air National Guard, total force, interagency, GWOT, war on terrorism, legal

4.21 What role does air and space power have in the urban operation environment?

- What capabilities exist within the USAF that make it uniquely qualified to project air and space power in the urban environment?
- Are the other services better suited to project air and space power within the urban environment?
- Would the 'operationalizing' of unmanned combat aerial systems improve the USAF's capabilities to apply air and space power in the urban environment?
- Does USAF doctrine adequately address the application of air and space power in the urban environment?
- What is the US policy/doctrine with regard to the autonomous application of air and space power in the urban environment?
- What effect will emerging technologies (e.g., directed energy capabilities, persistent area dominance munitions, micro-UAVs, unattended sensors) have on the USAF's application of air and space power in the urban environment?
- Write unclassified lessons learned from operations in Afghanistan and Iraq.

POC: Mr Woody Parramore, AFDC/DD, 334-953-7560/DSN 493-7560

Priority: 1

Key Terms: urban operations, joint operations, UCAV, doctrine

4.22 How would expansion of UAV assets and other network-centric systems affect spectrum allocation?

- Examine spectrum allocation for UAVs in a theater.

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key Terms: UAV, UCAV, bandwidth, transformation, AOC

4.23 Examine the development of Regional Affairs Specialists (RAS) and the skills they require.

- How can RASs be tasked and assigned?
 - How should their skills and abilities be highlighted to make them more visible?
- How can RASs contribute to Predictive Battlespace Awareness in terms of cultural knowledge and understanding?
- What capabilities can RASs offer to a commander?
- What skills do RASs need to be most effective?
- How might they contribute to HUMINT?
- Should there be a dedicated career field for RASs? What is an appropriate career development path for these personnel? How can their RAS skills be maintained if it is a secondary duty?
- How could RASs be used to provide pre-deployment cultural training?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key Terms: FAO, HUMINT, personnel, common operational picture, COP, IPB, intelligence preparation of the battlespace

4.24 What should be the USAF role in NORTHCOM?

- What is the role of the Air Force District of Washington in National Capital Region defense?
- What authorities and policies exist to allow Air Force assets to be tasked?
- How should the Air Force, NORTHCOM, and the Department of Homeland Security interact?
- What USAF assets should be assigned to NORTHCOM?
- How can NORTHCOM best integrate with and support civilian agencies?
- What should be Guard and Reserve roles in NORTHCOM?
- How does First Air Force, as a component of NORAD, relate to NORTHCOM?

POC: Mr. Bob Boggs, NC J5, 719-554-1475

Priority: 1

Key Terms: ISR, mobility assets, Air National Guard, Reserves, total force, force protection, BMD, NMD, JFHQ-NCR

4.25 What are the implications of space situational awareness deficiencies for space control?

- Should there be a standing plan in response to an attack on US space assets?
- What policies, concepts of operations, and technologies are needed to improve space situational awareness? How can these be diffused across all space sectors?
- How can we tell if a satellite has been attacked? How will the source of the attack be attributed?
- What technologies are available or projected for adversaries and how might they use them against US assets?
- What are the consequences of the loss of space capabilities to the terrestrial warfighter?
- What could current capabilities provide in terms of responses?
- How should the current state of space situational awareness be advanced to better assist operational forces?
- When do/should the systems get integrated, earlier rather than later?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key Terms: situational awareness, space control, policy, satellite attack responses

4.26 What force structure is required for the renewed air defense mission?

- Examine issues of cruise missile defense, ballistic missile defense, and layered defense generally.
- What have been the changes since 9/11?
- Where does NORTHCOM fit in, and what is its relationship with NORAD?
- What is the current and future mix and the active duty role, since most air defense was handled by the Air National Guard?
- Does the mission have an impact on acquisition?
- How does layered defense (i.e., missile and air defense) of the country drive AF roles, missions, and equipment?
- What is the policy for “shoot down” decisions?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 1

Key Terms: Noble Eagle, air defense, terrorism, total force

4.27 Evaluate the use of the combatant commander’s Directive Authority for Logistics (DAFL) in OIF/OEF.

- Should logistics forces be pooled together under the command of a logistics component commander?
- Should Services retain control of their own logistics?
- What is the appropriate balance between Service and combatant command control over theater logistics?
- Consider a case study of OIF and/or OEF logistics contrasted with Operation DESERT SHIELD/STORM.

POC: Mr Woody Parramore, AFDC/DD, 334-953-7560/DSN 493-7560

Priority: 1

Key Terms: OIF, OEF, C2, logistics, organization

4.28 Airbase Opening (ABO) during Operation IRAQI FREEDOM (OIF).

- The transitions from seizure force to opening force to operating force were not smooth, and ABO planning was lacking – what guidance should be incorporated into joint doctrine to address these problems?
- To what degree are these problems attributable to deviation from existing joint doctrine?
- Consider a qualitative analysis in one or more ABO case studies (such as the opening of Talil AB, Iraq).

POC: Mr Woody Parramore, AFDC/DD, 334-953-7560/DSN 493-7560

Priority: 1

Key Terms: OIF, logistics, airbase opening, ABO, AMC, austere bases, access, case study, joint doctrine

4.29 AFDD 1-1 *Leadership and Force Development*

- How do we improve Air Force leadership, both NCO & officer?
- How do we improve warrior skill/knowledge training, physical and moral courage?
- How do we grow a culture of mentorship?
- How does the AF train leaders with the knowledge and skills sets needed to do more with less?
 - Suggest knowledge and skill sets that a leader might need to succeed in environments where they are asked to do more with less?
 - How to lead and motivate a team in an environment of personnel force reductions?
 - Do we have the right PME approach to develop leaders and the Air Force needed to meet future challenges? Does the PME process enable leaders to lead transformational change or does it reinforce the status quo?
 - Has PME evolved into a training program or is it still *PM Education*?
- Are there other Air Force missions that can be shed? If not, suggest additional missions and concepts that might be candidates and defend those ideas.
- Has the Air Force proclivity for engineering and hard sciences education shifted the focus away from other skill sets?
- Does the current OPR & promotion process enable transformational change, or does it reinforce the current culture?
- Suggest more ways the Air Force can improve its institutional self-assessment and self-criticism process.

POC: Mr Woody Parramore, AFDC/DD, 334-953-7560/DSN 493-7560

Priority: 2

Key Terms: education, training, leadership, PME, transformation, personnel force reduction

4.30 CONUS vs forward basing

- Does the US have the right balance between CONUS basing and forward basing?
- In the wake of the containment of Iraq from 1992 to 2003 and the shift to an expeditionary Air Force model, review this model and suggest improvements, if any.
- Are US Air Force bases around the world in the correct locations?
 - In what regions would the US want to close bases? Why?
 - Suggest criteria that could be used to determine if a base should be closed or opened?
- Discuss the impact a selected base closure might have on operational timelines?
- Consequence management after a CBRNE attack is of great concern to the US. As a result, the State Dept. is in negotiations with other nations to create agreements where each party would provide assistance in response to a CBRNE attack.
 - What affect could this have US forward basing?
 - Discuss the impacts on other nations should the Air Force need to land contaminated planes on foreign soil? Suggest consequence management approaches to handle such incidents.
 - Should the Air Force (US) pre-build decontamination sites across the globe to counter these attacks?
 - Would this affect basing agreements?
 - Where and how should the US handle contaminated airplanes in various theaters during actions involving enemy use of WMD?
- In certain scenarios involving enemy employment of WMD, the humanitarian impacts on certain AORs could be unprecedented, requiring a major Air Force effort.
 - What effect would closing forward bases have on the AF's ability to meet its humanitarian mission objectives?
 - In light of the Dec 2005 Tsunami in Asia, are there lessons learned about humanitarian operations that could be learned for future natural and manmade disasters?
 - Discuss humanitarian needs and Air Force capability shortfalls to respond to CBRN employment in CENTCOM, PACOM, or EUCOM theater of operations.
- Discuss the economic impact military installations in foreign nations have on the local community?

POC: Maj Peter A. Garretson, AF/A8XC, 703-692-4795

Priority: 2

Key Term: forward basing, WMD, humanitarian, capability shortfalls, base closures

4.31 Global Strike

- Discuss the tradeoffs in conducting Global Strike operations from CONUS vs forward bases?
- Discuss command and control relationships of various COCOMS for very prompt global strike assets, such as hypersonic craft, directed energy, long-range ballistic vehicles etc "silver bullet" operations.
 - For example: discuss command and control of a hypersonic craft launched from CONUS in support of a global COCOM such as US STRATCOM or SOCOM striking a target in support of an urgent need in another COCOM's AOR.

- What would be the effect if the Air Force converted all or some portion of the CONUS ICBM force to conventional warheads?
- Global Strike can be considered prompt or persistent, discuss the differences.
 - Does the distinction between the two make sense?
 - Define prompt in 2015.
 - In the F2T2EA process there is a necessary pause to permit decision makers to decide to “pull the trigger” and target and engage a target. Are there other ways to shorten the time needed to F2T2 and the decision-making cycle?
- Describe optimum prompt global strike architecture for the nation in 2015.
- Adversaries are working diligently to obscure targets in a wide variety of creative ways, suggest alternate approaches, techniques, and/or technologies that might mitigate these actions and improve targeting capabilities.
- Describe an optimum command and control architecture for special operators or platoon-level ground forces commanders to access and request support from extremely prompt global strike assets such as directed energy, space or near-space loitering weapons, or ballistic vehicles launched from great distances.

POC: Maj Peter A. Garretson, AF/A8XC, 703-692-4795

Priority: 2

Key Terms: global strike, forward bases, ICBM, F2T2EA, obscure targets, command and control, directed energy, hypersonic craft

4.32 Nanotechnology

- Discuss and suggest innovative ways to employ nanotechnology for the Air Force of the future.
- Discuss the environmental impacts of a nanotechnology-based weapon system.

POC: Tim Miller, SAIC, AF/A3SPI, 703-415-3338

Priority: 2

Key Terms: nanotechnology, environmental impact

4.33 Domestic strategic communications

- Many are of the opinion that Air Force is not as effective as the other Services in influencing political/civilian leadership.
 - Is this statement true? If yes, identify reasons why the Air Force is not as effective and present suggestions to improve the Air Force’s performance in that arena.
 - If it is not true, explain why and how the Air Force is effective at influencing the political/civilian leadership.
- How can the Air Force improve its ability to communicate the US’s mission and the Air Force’s role in that mission to the US population, political/civilian leadership, the other Services, and world?
- How should the Air Force communicate US policies and the Air Force’s role in those policies?

POC: Mr. George Monroe, AF/A8XZ, 703-692-6615

Priority: 2

Key Terms: influencing political process, Air Force communications, US policy, political/civilian leadership

4.34 Core Competencies

- What are, and what should be, the Air Force's core competencies?
- What are core competencies that the Air Force needs to grow?
- The Air Force is asking its personnel to develop new skills and capabilities to support the war efforts in Iraq and Afghanistan. Is this drawing the attention of the Air Force away from its core mission to "fly and fight?"
- Discuss alternatives to current processes to place personnel in the correct place to grow career, skills, expertise.
- How does the Air Force grow the Regional Affairs Specialist skill if it is not a career track?

POC: Maj Michele Green, AF/A5XS, 703-614-8394; Maj Peter A. Garretson, AF/A8XC, 703-692-4795

Priority: 2

Key Terms: core competencies, professional development, Foreign Area Officers, FAO, RAS

4.35 Total Force integration

- Suggest ways and alternatives to achieve total force integration.
- What should the Air Force of the future look like?

POC: Maj Peter A. Garretson, AF/A8XC, 703-692-4795

Priority: 2

Key Terms: total force integration

4.36 Centralized Control/Decentralized Execution (in Network Centric Warfare)

- Discuss the merits and drawbacks of centralized control/decentralized execution.
- Suggest ideas to improve command control of decentralized operations conducted within the Network Centric Warfare construct.

POC: Maj Peter A. Garretson, AF/A8XC, 703-692-4795

Priority: 2

Key Terms: centralized control, decentralized execution, network centric warfare

4.37 An independent view of Space System Tasking

- AFSPC will soon be deploying many new space systems that may be tasked by various users (e.g. SBIRS, TSAT, Space Radar).
- Compare and discuss existing models for tasking such assets. For example, the Intelligence Community approach to tasking ISR systems, or the Air Mobility TACC model for tasking mobility aircraft.
- Suggest ideas and alternatives for command and control/tasking of such systems.

POC: Maj Dan McCutcheon, AF/A3SSO, 703-695-6900

Priority: 2

Key Terms: space system tasking, SBIRS, TSAT, Space Radar, intelligence community, command and control

4.38 Air Force support to Army modular transformation—a historical perspective

- Consider lessons learned from WWII air support to distributed ground operations and apply them to the 2010-2020 timeframe.
- Examine Operation MARKET GARDEN and the China-Burma-India theater.
- Use these lessons to frame the discussion of how the Air Force will be required to support post-transformation Army and/or Marine ground operations.

POC: Mr Woody Parramore, AFDC/DD, 334-953-7560/DSN 493-7560

Priority: 2

Key Terms: transformation, logistics, ground operations, AMC, case study, joint doctrine

4.39 What is the Air Force role in the President's vision for space?

- If the United States, as well as a competitor, has a permanent presence on the moon will the Air Force have a role?
- Will there be a Coast Guard-like role for protecting space transports?
- Is there military utility to having a permanent manned base on the Moon?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 2

Key Terms: space operations, NASA, doctrine

4.40 What is the right mix of ground, air, and space assets to provide alternate means of command and control of nuclear forces and launching ICBMs?

- Should an aircraft UHF C2 capability remain?
- Should satellites (MILSTAR) become the primary/only source of emergency action messages and alternate missile launch capability (besides landlines) for the nuclear ICBM force?
- If the UHF is maintained, what is the right CONOPS?

POC: Reb Benson, SAIC, 703-415-3332

Priority: 2

Key Terms: ISST, SHF, C2, organization, Space Command

4.41 Assess the capability and identify the issues related to using ballistic missiles and production equipment from commercial entities for space launch.

- What are the legal liabilities to sale or lease of ICBM production equipment?
- What are policy (e.g., arms control) and implementation concerns and how can these be overcome?
- What types of control would need to be in place?

POC: Reb Benson, SAIC, 703-415-3332

Priority: 2

Key Terms: space operations, Space Command, NASA

4.42 What are the implications for strategic responsiveness if the Air Force adopted the Configurable Air Transport?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 2

Key Terms: mobility, AMC, doctrine

4.43 What role should wargaming, modeling and simulation and other automated tools have in campaign planning?

- What types of tools do campaign planners want and which would be most useful?
 - What do decision makers want?
- Examine the best industry interfaces. Which are most useful?
- How can wargaming and modeling and simulation contribute to adaptive planning?
- How can/should wargaming and experimentation be integrated into the campaign planning process?
- How should Analysis of Alternatives (AOAs) be done, what tools are needed?
- Discuss the lack of modeling and decision tools for operational tradeoffs (e.g., air versus space).
- How should the impact from the loss of an asset be assessed?
- Develop measures of merit for how various systems contribute to warfighting.
- How can the timelines for developing and obtaining results from wargames be shortened?

POC: JFCOM J-9 Orville “Bud” Hay

Priority: 2

Key Terms: AOAs, wargaming, modeling, programming, lessons learned

4.44 Assess the threat posed by adversaries’ use of air and space capabilities.

- What disruptive technology are adversaries investing in?
- How do other nations intend to use space power (communication, GPS, remote sensing) to facilitate terrestrial warfighting?
- How do other nations intend to use emerging technologies (directed energy, advanced missile technology, advanced air-to-air capabilities, computing, and advanced materials) to facilitate warfighting?
- Will other nations “leap-frog” over US legacy systems?
- Examine adversary acquisition of ISR.
- How could future adversaries mitigate US air and space advantages? What are the ramifications if they do find ways? What low-technology means might adversaries use?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 2

Key Terms: counterspace, space operations, Space Command, space control, foreign threat.

4.45 Assess the domestic and international impact of the US deploying weapons in space.

- Address overall impacts:
 - Define weaponization and what a weapon is.
 - Examine pathways to weaponization of space.
 - How do we get there from here?
 - Why would we weaponize space?
- Address international impacts:
 - How do adversaries, neutrals, and allies view space weaponization and how would they react if the US deployed weapons in space?
 - What are the international security issues that need to be addressed?
 - How should the US prepare for competition along each pathway and how would we deter adversaries from taking any of these pathways?
 - How might space weaponization impact the freedom of overflight of military, civil, and commercial systems?
- Address domestic impacts:
 - Does space weaponization enhance or weaken domestic security?
 - What are the unintended consequences of deploying—or using—weapons in space?
 - Should the US move now to take control of the “high ground”?
 - What public affairs approach should the US pursue to explain the case for weaponizing space?

POC: Mr. Gil Siegert, OASD (C3I) Space Policy Directorate, 703-607-0356

Priority: 2

Key Terms: space operations, space weaponization, foreign relations, overflight, commercial, force application, alliance, deterrence, public affairs, legal

4.46 What role could force application from space play in future military operations?

- Examine the value of space systems in responding rapidly to expected crises in the future (e.g., Space Operations Vehicle, Space Maneuver Vehicle, Common Aero Vehicle, Spaceplane, reusable launch vehicles, space-based weapons, conventional ballistic missiles, and hypersonic vehicles).
- Examine concepts of operation for new space force application systems.
- Examine the relationship between rapid response of such systems and commander’s decision timelines.
- What are the arms control implications of conventional weapons delivered from reusable vehicles?
- Are there significant differences politically between deployment from orbital and suborbital vehicles?
- Could commercial reusable launch vehicles (RLVs) be used to deploy conventional weapons?

- Evaluate results of recent wargames and their lessons for space operations.

POC: Mr. Gil Siegert, OASD (C3I) Space Policy Directorate, 703-607-0356

Priority: 2

Key Terms: space-based weapons, space operations, conventional weapons, reusable vehicles, arms control, orbital, suborbital, RLVs, hypersonic vehicles

4.47 What can the AF contribute to the Proliferation Security Initiative?

- How can it contribute to the intercept mission in the air, on land, and at sea?
- Discuss the policy and legal implications of such operations.

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 2

Key Terms: counterproliferation, arms control, WMD, PSI

4.48 Should the Air Force begin to think about using a non-petroleum fuel source, such as nuclear-powered systems?

- What would be the implications for a propulsion acquisition strategy?
- Should the Air Force be considering nuclear-powered systems for air and space?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: R&D, energy, oil

4.49 What is the relevance of classic military literature to modern warfare?

- Examine the relevance of Clausewitz, Sun Tzu, and others.
- Evaluate potential new best practices that are more appropriate to current warfare (4th generation warfare, post-modern warfare).
- Evaluate Warden's five rings in the context of lessons from Iraq.

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: history, lessons learned, OIF, OEF, doctrine, organization

4.50 Why are some Air Force assets still high-demand, low-density?

- Why has the problem not been mitigated?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: HDLD, organization, acquisitions

4.51 How could/should the Air Force forecast for the distant future?

- Examine past efforts, such as Air Force Horizons, Air Force 2025, Project Forecast. Are these models?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: modeling, AOAs, lessons learned

4.52 Are Technology Control Regimes beneficial?

- Discuss their effectiveness?
 - Do they create unintended consequences, and if so, what might they be?
- Looking at items on the US munitions list, are there any that should be removed or waived in order to advance U.S. national goals?
- What should a waiver process look like?

POC: Maj Chris Byrom, U.S. Department of State, ISN/SPO, 202-647-7907

Priority: 3

Key Terms: technology control regimes, US munitions lists, waivers

4.53 What role does the Air Force have in sea-basing?

- What should the Air Force be doing?
- How does this Navy concept aid Air Force air power?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: joint operations, doctrine, organization, transformation

4.54 Transformation Progress

- How do you measure transformation progress?
- What is the desired end state of Air Force transformation activities? If there is no end state, but rather a state of constant change, how does one measure and determine success?
- What does transformation mean?
- What qualities and organizational constructs is the transformed force suppose to possess?
- What role can the Air Force have in influencing other services' transformation?
 - How can the Air Force help? (e.g., working with the Army on Future Combat System implementation)
 - How can transformation be inter-service and not only intra-service?
 - How can the planning and budgeting of the services be integrated for transformation?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: joint operations, doctrine, acquisitions

4.55 What was done in the 1947 Key West talks relating to roles and missions?

- Should similar talks be held today and what roles should the different services have?
- What potential tradeoffs could be made between DOD and others in the interagency (State, NASA, etc.) that would reduce costs while keeping risk at an acceptable level?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: joint operations, organization, pol-mil

4.56 What are the obstacles and potential solutions to developing joint space doctrine?

- Survey the current roles performed by the Services and other national organizations in providing national security space capabilities.
- What conceptual, organizational, and cultural impediments exist to developing joint space doctrine?
- How well is JP 3-14, *Space Operations* (August 2002), being implemented? Why did it take so long to produce joint space doctrine?
- What role should the USAF play in resolving these impediments?
- What type of space doctrine is needed to support joint operations?
- If developed, what are the lessons learned, what are future applications?
- Are there significant overlaps if all services are expected to perform all space missions?
- Amplify existing doctrine on command relationships for command and control of space forces.
- Elaborate on the types of support space operators provide as warfighters—general, mutual, close, and direct support—with associated vignettes from recent operational experience.
- Provide a template for an establishing directive applied specifically to supporting space operations.

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: Organization, culture, joint operations, doctrine, lessons learned, space

4.57 How did the Air Force experience with Iraqi no-fly zones (NFZ) affect Air Force performance in OIF?

- What policy objectives would be best supported by a NFZ?
- Are there viable alternatives to NFZs?
- What are metrics for evaluating a NFZ?
- How could the US experiment with alternatives?

POC: Dr Jeff Larsen, SAIC, (719) 637-8740

Priority: 3

Key Terms: NFZ, case studies, Iraqi Freedom, lessons learned

4.58 What are the implications of foreign sourcing of defense materials, especially in a changing political environment?

- How are financing issues handled?
- What might be the effect of shifting alliances?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: commercial space systems, FARs, surge capacity, military needs, acquisitions, pol-mil

4.59 How can the DOD prevent organizational seams from becoming operational seams in air and space operations?

- How did the space community respond to the Space Commission and Hart-Rudman Commission?
- What are the issues related to the collision between space vs. warfighter cultures?
- Examine AEF, active-reserve component, and regional command organizational seams.
- Under what conditions might it be appropriate to consider a separate Space Force?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: organizational seams, organizational culture, space, warfighter

4.60 Discuss how US export policies could endanger US national security.

- Assess US options for export control of militarily-significant technologies.
- What is the impact of the increasingly multi-national character of defense industries?
- What are the issues that confront DOD as it considers strategies to either shape the commercial environment or adapt to its influences in a way that is most beneficial to national security interests?
- What are the intellectual property issues involved?
- What is the impact of foreign students and companies in the US?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: space commerce, international regulatory regimes, competition, insurance, export control, financial markets, DOD, arms control, nonproliferation

4.61 Describe alternative strategies for resourcing air and space systems through cooperative, leasing, or financial reimbursement arrangements.

- What capabilities could the military divest to the civil or commercial sectors?
- Assess various divestiture strategies.
- What impact would such policies have on the funding of future air and space systems?
- How are cost differences between military-supplied air and space and out-sourced air and space assessed? (airlift, bandwidth, support services, ISR, security)
- Examine international experiences with such arrangements.

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: resourcing, divestiture, leasing, out-sourcing, air and space systems, acquisitions

4.62 What are the key personnel issues facing the Air Force?

- Examine such issues as:
 - Combat training for support personnel
 - Airman filling traditional Army roles
 - End-strength: what is proper force size, given changing missions (e.g. air defense)
 - The mix between the active force and the reserve component
 - The “blended wing” concept
 - Total force retention in face of high OPSTEMPO
 - Balance between active and reserve component in terms of benefits
 - Recruiting and retention in high skilled technology areas – Does the Air Force compete with private industry or outsource instead?

POC: INSS, 719-333-2717/DSN 333-2717

Priority: 3

Key Terms: personnel, total force, recruiting, retention, OPSTEMPO, PERSTEMPO

4.63 Effects-Based Operations (EBO) in Low Intensity Conflict/Operations Other than War/Stability Operations.

- Examine the current and historical record and evaluate the applicability of these EBO principles to lower-intensity conflict, conflict other-than-war, and to stability operations following major combat.
- Explore concrete examples of how the principles of EBO apply to (or don’t apply to, or are especially applicable to) the conduct of lower-intensity conflict and the conduct of operations after major combat operations have concluded.

POC: Mr Woody Parramore, AFDC/DD, 334-953-7560/DSN 493-7560

Priority: 3

Key Terms: lessons learned, case studies, joint doctrine, planning, SASO, MOOTW, post-conflict, OIF, OEF

4.64 Effects-Based Operations (EBO) in military history

- Analyze one or more of the EBO principles set forth in AFDD 2, present historical instances in which these principles have been employed, and examine the results thereof.
- Consider in particular examples in the history of air and space power.
- Examine cases where the principles have been misunderstood or misapplied.

POC: Mr Woody Parramore, AFDC/DD, 334-953-7560/DSN 493-7560

Priority: 3

Key Terms: lessons learned, case studies, joint doctrine, planning, doctrine

4.65 How can/should the Air Force Auxiliary (Civil Air Patrol) role be expanded for emerging air/space/cyber roles and functions?

- How can we best expand on the “air” dimension with space and cyber functions?
- Should expansion be limited to increasing emphasis on support areas such as medical, law enforcement, and chaplain?
- Is homeland defense and civil support an appropriate arena for role expansion?

POC: Lt Col Kenneth Wessels, AF/A3SHA, 703-696-3637

Priority: 3

Key Terms: Air Force Auxiliary, Civil Air Patrol